TOP SECRET

T O P S E C R E T 311533Z OCT 69 CITE [redacted] 7322 1969 OCT 31 16 43Z 25X1

25X1

OUT 68682

25X1

CORONA
REF A. [redacted] 3341, 2 OCT 1969
REF B. 3400, 10 OCT 1969

[redacted]

SUBJECT: MISSION 1052, PHOTOGRAPHIC EVALUATION INTERIM REPORT (PEIR)

1. NUMERICAL SUMMARY
MISSION NO. & DATES: 1052-1 22 - 29 SEPT 1969
1052-2 29 SEPT - 7 OCT 1969
LAUNCH DATE & TIME: 22 SEPT 1969/2111Z
VEHICLE NUMBER: 1653
CAMERA SYSTEM: J-46
PAN CAMERA NUMBER: MASTER S/N 216, FWD LOOKING
SLAVE S/N 217, AFT LOOKING
FILM TYPE: 3404
MISSION 1052-1 S/I NO: D111/138/137
MISSION 1052-2 S/I NO: D110/140/140
RECOVERY REVS: 1052-1 REV 115, 29 SEPT 1969
1052-2 REV 244, 7 OCT 1969

2. CAMERA SETTINGS
FWD LOOKING SLIT 0.225 FILTER WRATTEN 23A
AFT LOOKING SLIT 0.170 FILTER WRATTEN 21

3. PERFORMANCE SUMMARY: AN MIP OF 85 IS ASSIGNED TO MISSION 1052. IMAGE QUALITY RANGES FROM FAIR TO POOR, AND IN GENERAL, THE IMAGERY IS NOT COMPARABLE TO THAT PROVIDED BY THE BETTER J-1 MISSIONS. THE BEST QUALITY OF THE MISSION CAME FROM THE FORWARD LOOKING CAMERA, ALTHOUGH IMAGE QUALITY VARIABILITY OF THE FORWARD LOOKING CAMERA IS GREATER THAN THE VARIABILITY OF THE AFT LOOKING CAMERA. IMAGE QUAL[redacted] RANGES FROM THAT FOUND ON THE MIP FRAME TO THAT IMAGERY WHICH CANNO[redacted] BE MAGNIFIED ABOVE 25 - 30X. BOTH CAMERAS HAVE MORE RANDOM IMAGE SMEAR AT THE TAKE-UP SIDE OF THE FORMAT THAN RECENT J-1 SYSTEMS. INTERPRETABILITY OF THE MISSION IS JUDGED TO RANGE FROM POOR TO FAIR AND IS NOT AS GOOD IN THE SECOND PART OF THE MISSION DUE TO WEATHER CONDITIONS.

4. ANOMALIES:

A. ANOMALY - TWO PARALLEL PLUS DENSITY STREAKS, SPACED APPROXIMATELY 1/8 INCH APART AND PARALLEL TO THE MAJOR AXIS OF THE FILM ARE PRESENT THROUGHOUT MISSION 1052-2 ON THE AFT LOOKING CAMERA. THESE STREAKS ARE LOCATED APPROXIMATELY ONE INCH FROM THE TIME TRACK EDGE OF THE FORMAT.

CAUSE - THIS MARKING APPEARS TO HAVE BEEN CAUSED BY THE PUCK ARM IN THE TAKE-UP. THIS MARKING, VISIBLE RANDOMLY THROUGHOUT THE MISSION WAS SUBTLE AND OFTEN EXTREMELY DIFFICULT TO SEE. DEGRADATION TO FILM OR PHOTOGRAPHY WAS MINOR.

ACTION - NONE REQUIRED.

B. ANOMALY - THE HORIZON CAMERAS, PORT AND STARBOARD OF THE FORWARD LOOKING CAMERA DID NOT OPERATE ON FRAMES 135 AND 137 OF PASS D072.

CAUSE - THE HORIZON CAMERA FIDUCIALS WERE NOT PRESENT ON THESE FRAMES; HOWEVER, ALL CENTER OF FORMAT FUNCTIONS WERE RECORDED IN A NORMAL MANNER. THIS MODE OF FAILURE INDICATES A MALFUNCTION OF THE HALF-REV SWITCH. THIS FAILURE COULD BE THE RESULT OF MARGINAL OVERTRAVEL ADJUSTMENT OR A PARTICLE OF DIRT LODGED IN THE SWITCH.

ACTION - NONE RECOMMENDED.

C. ANOMALY - A FILM TEAR WAS DETECTED IN THE AFT CAMERA ORIGINAL MATERIAL DURING THE DEFILMING OPERATION OF MISSION 1052-1. THE TEAR IS LOCATED AT THE CENTER OF FRAME 43 OF PASS D56. IT EXTENDS THROUGH THE BINARY FILM EDGE, A DISTANCE OF

25X1

DISTRIB[redacted] 25X1

CY	OFFICE	PI
1	FILE	
	CABLE SEC.	
	PP&B/RD	
	SECUR.	
3,4	TSSG/AIRD	
	PSC/OC	
	RRD	
	REPRO	
	AID	
	IEP	
	FLOD	
	SOVA	
	WEST	
	EAST	
	MOS	
	PGM	
	IAS	
	DIA-XX1	
	SPAD	
	DIA-A[redacted]	
	[redacted]	
	NMX	

ADVANCE CY SANITIZED WITH TEXT

TOP SECRET

Excluded from automatic downgrading and declassification

APPROXIMATELY ONE INCH AT AN ANGLE OF 65 DEGREES (IN THE SUPPLY DIRECTION). THE FOLLOWING OBSERVATIONS WERE MADE FROM THE PROCESSED ORIGINAL NEGATIVE:

(1) IMAGERY IN THE IMMEDIATE VICINITY OF THE DAMAGED AND TORN PORTION DID NOT APPEAR DEGRADED.

(2) RAIL HOLE IMAGERY, ALONG THE BINARY EDGE, UP TO AND BEYOND THE REPAIR SPLICE, WAS NOT DEGRADED.

(3) THE FORMAT EDGE, ON BOTH SIDES OF THE SPLICE DID NOT SHOW EVIDENCE OF FILM DISPLACEMENT OR RUBBING DURING PHOTOGRAPHY.

(4) THE TEAR APPEARED TO ORIGINATE AT THE CENTER OF THE MATERIAL, OUT TO THE EDGE, RATHER THAN FROM THE EDGE INTO THE CENTER.

(5) FILM EDGES ON BOTH SIDES OF THE TEAR DID NOT EXHIBIT ANY FOLDS AS WOULD BE EXPECTED IF THE TEAR HAD BEEN PULLED OVER ROLLERS.

CAUSE - IT WAS NOT POSSIBLE TO DETERMINE THE EXACT CAUSE OF THE DAMAGE. IT APPEARED, HOWEVER, THAT THE TEAR OCCURRED AFTER THE IMAGERY HAD BEEN EXPOSED ON THE NEGATIVE AND POSSIBLY COULD HAVE OCCURRED DURING THE OFF SPOOLING OPERATION AS THE FILM WAS TRANSFERRED FROM DYNAMIC TO STATIC CONDITION FOR EXAMINATION OF A MANUFACTURING SPLICE.

ACTION - NONE RECOMMENDED - DESPOOLING PROCUDURES ARE DIFFERENT FOR 1100 SERIES MISSIONS.

D. ANOMALY - AFT CAMERA FRAMES 32 THROUGH 35 OF PASS D25 WERE INADVERTENTLY FOGGED DURING THE DEFILMING OPERATION RESULTING IN SEVERE DEGRADATION.

CAUSE - DURING THE DEFILMING OPERATION, A BRIGHT FLASH EMANATED FROM THE SRV. THIS FLASH WAS BRIGHTER THAN NORMALLY OBSERVED STATIC DISCHARGE FLASHES. THE FLASH APPEARED ON THE SIDE OF NUMBER 2 (AFT) SPOOL WHERE AN ELECTRICAL CONNECTOR WAS RUBBING ON THE MAGNESIUM SPOOL FLANGE. A POSSIBLE CAUSE OF THE FLASH WAS THE IGNITION OF MAGNESIUM DUST WHICH FORMED AS A RESULT OF THIS RUBBING OF THE ELECTRICAL CONNECTOR ON THE SPOOL FLANGE. A SUBSEQUENT LABORATORY TEST AT [redacted] FAILED TO PRODUCE THE FLASH, BUT VERIFIED THAT A MAGNESIUM DUST CLOUD IS GENERATED AS A RESULT OF THE RUBBING CONDITION. 25X1

ACTION - PROCEDURAL CHANGES HAVE BEEN INSTITUTED IN THE DEFILMING OPERATION TO ASSURE THAT THERE WILL BE NO INTERFERENCE WITH THE SPOOL FLANGES IN THE FUTURE. IN ADDITION, THE CONNECTOR REFERRED TO IS NO LONGER FREE TO RUB ON THE FLANGES.

E. ANOMALY - A FOUR INCH LONG CREASE APPEARS BETWEEN FRAMES 81 AND 82 OF PASS D136 ON THE FORWARD CAMERA.

CAUSE - A REVIEW OF THE POSSIBLE WAYS THIS CREASE COULD HAVE BEEN GENERATED BY THE CAMERA WAS UNDERTAKEN AND REMAINS UNIDENTIFIED.

ACTION - NONE RECOMMENDED.

F. ANOMALY - FOUR DIAGONAL MARKS (MINUS DENSITY) THAT TRANSVERSE THE FRAME. WHEN DETECTED THESE MARKS ARE PRESENT EVERY 37 TO 39 INCHES. THESE MARKS WERE OBSERVED ON FILMS FROM BOTH CAMERAS AND ON THE PREFLIGHT SAMPLES.

CAUSE - UNKNOWN.

ACTION - NO RELATIONSHIP HAS BEEN MADE THAT CAN RELATE THE MARKING EITHER TO THE CAMERA SYSTEM OR THE FILM. DUE TO THE MINOR DEGRADING EFFECT, NO FURTHER ACTION HAS BEEN RECOMMENDED.

G. ANOMALY - THE FILM FROM THE FWD-LOOKING CAMERA CAME OUT OF THE RAILS BEGINNING WITH FRAME 1 OF PASS D236 TO THE END OF THE MISSION (FRAME 36 OF PASS D236).

CAUSE - THE RAIL PULL-OUT ON THIS SYSTEM WAS CHARACTERISTIC OF THOSE WHICH OCCUR FROM FILM TENSION TRANSIENTS ON SHUTDOWN. DURING

READINESS TESTING, THE FWD LOOKING CAMERA EXPEREIENCED AN OUT OF THE RAILS FAILURE WHILE IN THE "A" MODE WITH A FULL SUPPLY. THIS FAILURE WAS ATTRIBUTED TO THE DIFFERENCE IN RAMP-DOWN TIMES BETWEEN THE PAN INSTRUMENT AND THE SUPPLY SPOOL. A RESISTANCE ADJUSTMENT WAS MADE TO THE S/C RAMP-DOWN CIRCUIT. SATISFACTORY TESTS WERE PERFORMED UTILIZING A FULL AND A NEAR EMPTY S/C. THE FLIGHT FAILURE OCCURRED HOWEVER, AT THE MISSION END WITH AN S/C LOADING EVEN LOWER THAN THAT TESTED.

ACTION - NONE. THIS TYPE OF FAILURE IS NOT APPLICABLE TO 1100 SERIES SYSTEMS.

H. ANOMALY - AN INTERMITTENTLY HUNG SHUTTER ON THE STELLAR CAMERA CAUSED 25 FRAMES TO BE OVEREXPOSED. THE OVEREXPOSURES CAUSED MINOR FOGGING OF THE ADJACENT FRAMES. STELLAR IMAGES ON THE OVEREXPOSED FRAMES ARE DIFFICULT TO DETECT. THE OVERALL PRODUCT ON THESE FRAMES WAS SUITABLE FOR ATTITUDE REDUCTION.

CAUSE - THIS MALFUNCTION CAN BE THE RESULT OF STICKING SHUTTER LEAVES OR MECHANICAL BINDING IN THE SHUTTER DRIVE MECHANISM.

ACTION - NONE. THE 1 1/2-INCH STELLAR INDEX CAMERA IS NOT FLOWN ON 1100 SERIES MISSIONS.

5. SPECIAL BREIFINGS:

A. [redacted] PRESENTED A BRIEFING ON THE COMPUTER PROGRAM "CASSANDRA". THIS PROGRAM IS DESIGNED TO TAKE INPUTS FROM THE ORBITAL TARGET ACCESS MODULE "OSTAMOD" AND THE ATMOSPHERIC DATA BANK PROGRAM "CRYSTAL BALL" TO COMPUTE GROUND RESOLVED DISTANCE FOR THE CORONA RECONNAISSANCE SYSTEM. AN ATTEMPT WILL BE MADE TO USE THE PROGRAM ON MISSION 1108. DATA OBTAINED FROM "CASSANDRA" WILL BE USED FOR MISSION PLANNING AND POST FLIGHT DIAGNOSTICS. 25X1

B. [redacted] PRESENTED A REVIEW OF THE ON-GOING PROJECT [redacted] 25X1
[redacted] IS A PROJECT DESIGNED TO STUDY EXPOSURE ACCURACY USING APPROXIMATELY 100 PRIMARY TARGETS. CLOUD SHADOW, SNOW ICE, SMEAR, FOCUS, CLOUDS, HAZE AND SMOKE ARE SOME OF THE ITEMS WHICH CONTRIBUTE TO THE RESULTS. TO DATE, THE RESULTS OF PROJECT [redacted] HAVE CONTRIBUTED GREATLY TO THE ACCURACY OF EXPOSURE SETTINGS FOR THE CORONA SYSTEM. 25X1

C. [redacted] PRESENTED A BRIEFING DESCRIBING THE CHARACTERISTICS OF AERIAL COLOR FILM TYPE SO-242. THE ATTRIBUTES OF SO-242 ARE AS FOLLOWS: 25X1

(1) PHOTOGRAPHIC SPEED COMPARABLE TO TYPE 3404/SO-380.

(2) IMPROVED RESOLVING POWER; SPECTRAL SENSITIVITY AND LATENT IMAGE KEEPING CHARACTERISTICS OVER SO-121.

(3) IMAGE QUALITY APPROACHING 3404/SO-380.

AN INTERIM SYSTEM FOR MAKING DUPLICATE COPIES OF THE SO-242 WAS DISCUSSED. SO-360 WILL BE USED FOR MAKING DUPLICATE POSITIVES OF THE ORIGINAL. IN ADDITION, INTERNEGATIVES WILL BE MADE. THESE INTERNEGATIVES INCLUDE BOTH A CONTACT PRINT COPY AND 10X ENLARGEMENTS OF SELECTED AREAS. BOTH POSITIVE TRANSPARENCIES AND PAPER BRIEFING PRINTS CAN BE MADE FROM THESE INTERNEGATIVES. SO-242 IS CURRENTLY BEING TESTED IN THE CORONA SYSTEM FOR USE ON 1100 SERIES MISSIONS.

6. PEIR ACTION ITEMS: THE OPEN ACTION ITEM LISTINGS AND PROCEDURES FOR HANDLING ACTION ITEMS WHICH WERE PREPARED BY [redacted] WERE REVIEWED BY THE PET. RECOMMENDATIONS ON THE [redacted] PROPOSAL WERE FURNISHED TO [redacted] BY THE PET, AND A NEW REPORTING PROCEDURE HAS BEEN ESTABLISHED FOR THE 1100 SERIES MISSIONS. SINCE MISSION 1052 IS THE LAST J-1 MISSION, ALL J-1 ACTION ITEMS HAVE BEEN CLOSED. J-1 ACTION ITEMS WERE REVIEWED AT THE PET TO INSURE THAT NO J-1 ACTION ITEMS COULD BE RELATED TO J-3 PROBLEMS. AS REQUIRED BY THE 1107 PEIR, THE 1107 ACTION ITEMS WERE 25X1 25X1

REVIEWED AND CLOSED BY [redacted] TWX 2131. OTHER ACTION ITEMS CLOSED BY THIS PET ARE: 25X1

228/1104 - DISIC TIME WORD - HARDWARE REDESIGN
248/1105 - UTB PROBLEMS - TEST AND REQUALIFICATION
256/1105 - UTB PROBLEMS - TEST AND REQUALIFICATION
261/1105 - UTB PROBLEMS - TEST AND REQUALIFICATION

T O P S E CR E T

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END OF MESSAGE

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